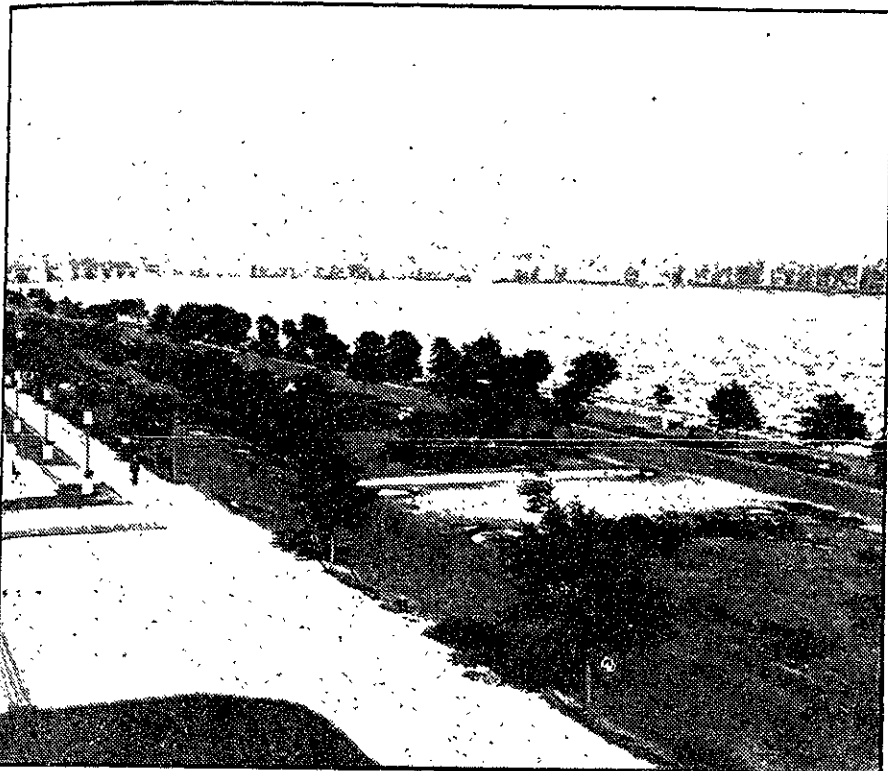


VIEW OF CITY FROM INSTITUTE BUILDINGS



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S. A. T. C. BULLETIN

The present issue list does not provide for pillows, pillow cases, or sheets. Members of the S. A. T. C. may furnish these for themselves if they desire, but only clean and fresh stuff will be allowed in barracks.

The original issue of clothing will be of cotton khaki, not very suitable for this latitude, but all that can be had at present. The Institute, at present, has at its disposal, fifteen hundred uniforms, made of all wool serge, cut and tailored as officers' uniforms. It will be well for those who can afford it to bring the money to buy one of these. This will get men into uniform quickly, furnish a superior type of uniform to wear off the site after suitable government uniforms are issued. These latter will be much inferior to those available for purchase.

The uniforms under contract will be ready next week in a full line of stock sizes, to be accurately fitted in each case. Men who want them will have to act quickly as the uniform may be taken by the Government at any time. No commutation will be allowed for them, but possession of them will not interfere with any free issue to which the student is entitled. The Institute has no interest in getting these sold, as they are supplied on informal agreement, but it is believed that the first Government issue, besides being made of cotton, will fit badly, as the sizes are for older men, and consequently men wishing to present a good appearance will do well to make this expenditure when they can afford it.

While clothing, bedding, etc., is to be issued free to members of the S. A. T. C., many delays are apt to take place on account of the tremendous task the Government has on hand.

Men must for this reason, come prepared in the matter of civilian clothing, overcoats, etc., so that they may keep comfortable until they can be outfitted, when civilian clothing can be shipped home or sold.

In the matter of bedding, three blankets will be issued. As the mattresses are thin, at least one of these blankets must be used under the sleeper, and two or even three blankets on top may not be sufficient in very cold weather. Instead of adding to weight of blankets, it is well to be provided with some form of down, fleece, or cotton quilt. Any of these which are brought into the barracks must be new and clean.

A number of volunteers for assisting in work of setting up bedding, etc., in barracks will be needed early next week, although I cannot say exactly on what date. If this work is finished up and barracks in shape before the rush it will very greatly facilitate matters.

Examinations for induction, vaccination, etc., will begin with men accepted by the Institute, as soon as the papers can be made out and surgeons secured. It is well to have this over with as soon as possible. Such men as volunteer to assist in the week before school opens will be given the preference in these matters, so far as this office can control them. They will also be allowed to go into the barracks at the earliest possible date.

Men who are willing to give this service, please watch the bulletin board and report for duty when call is made.

EDWIN T. COLE,
Major, U. S. Army
Commanding, Student Army
Training Corps.

PLAN TO CUT CROSS HAULS OF RAW TANNING MATERIAL

The War Industries Board authorizes the following:

Plans to reduce cross hauls of raw tanning materials to relieve transportation conditions in Tennessee, North Carolina, and Virginia were discussed at a conference by E. J. Haley, of the tanning materials section, chemical division of the War Industries Board, with manufacturers of domestic tanning extract. The meeting was the suggestion of the car service section of the Railroad Administration.

It was decided to postpone definite action until tentative plans to be framed by committees representing each of the three States could be presented to a general committee consisting of R. W. Griffith, C. H. Heald, John E. Obern, and William H. Teas. The latter committee will advise with the tanning materials section on final action.

RECORD NUMBER OF STUDENTS EXPECTED TO ENROLL AT THE INSTITUTE THIS YEAR

S. A. T. C. to Contain Seventeen Hundred Students
and Naval Unit to Have Four Hundred
Making Total Over 2000.

REGISTRATION COMMENCES FRIDAY

Beginning October first, Institute men are going to have an opportunity to serve Uncle Sam and at the same time carry on their professional training. This means a great deal both to the Institute and to the country, now that the need for technically trained men is so urgent. Already far too many men with a technical education have taken positions in the service where their professional knowledge cannot be used. This of course means a great loss to the country. That is why the war department has designated the S. A. T. C. not only as a training school but also as a place of selection and classification.

In the afternoon Major E. T. Cole, U. S. N., retired, commandant of the S. A. T. C. at Technology, began the examination and enrollment of other students for the S. A. T. C. A corps of six physicians in others of Dr. Sedgwick's laboratories will examine the students for the military group of this students' corps, and it is expected that the number here enrolled will be about seven hundred. The two groups will together exceed two thousand, a number larger than any previous registration at the Institute.

Meanwhile two other activities were today initiated, the examinations and the conferences with men from other colleges and from other countries. All these groups give evidence of touching record figures, some sixty men from other colleges having been interviewed by the secretary, a very large share of the two hundred that has in the past been the highest figure.

The various groups, the young men thronging about the information desk together with the Naval Aviators whose numbers have increased since the Army school was discontinued make the great lobby as busy as in the height of the school year. This is the more interesting since it is not until Friday that the regular registration begins, the present operations being supplemental and dependent upon this.

With reference to the curriculum, the Institute authorities are not yet quite ready to present it in its particulars. The outline of a fortnight ago has been modified at request of Washington and some details are still to be worked out. In general it may be characterized as a series of intensive study terms. The curriculum of past years has been on the basis of eight terms of fifteen weeks each covering four years; the present plan is for eight terms of twelve hours each included within two years. By

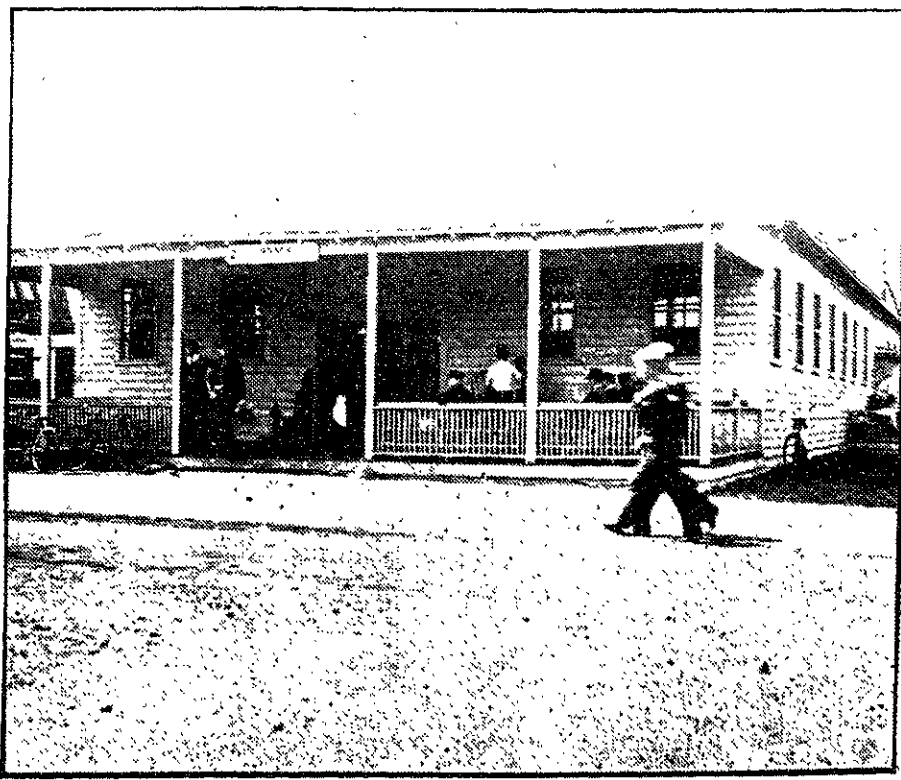
the omission of the thesis work and certain elaborations of the studies, the student will now receive the essentials of the regular professional courses in his eight terms. The military work will be the minimum, four hours a week and there will be some curtailing of the broadening courses like literature that the Institute has always given. What there is of such studies has been focussed on war essentials; languages will be French and German, those of the Continental warring nations, history that tends to illustrate the reasons for the war, government and the like. The student will be first of all a well-grounded engineer and next well educated in the "war issue" studies. With these intensive courses there is reason to believe that the Government will permit the largest possible number of students to complete their courses two years hence.

BOSTON ARCHITECT DIES OF INFLUENZA

Joseph McGinniss, a Boston architect, died yesterday at his home, 14 Wellesley avenue, Wellesley, from influenza. He had been ill only a few days. His wife, Elizabeth G. McGinniss, and his 3-year-old son are suffering from the same malady.

He was 34 years old, received his early education in the Boston schools, and later was graduated with honor from Technology. After two years spent in study in Europe, he returned to this city and opened offices at 16 Arlington street. He designed several Catholic churches in and about Boston and numerous residences. His latest work was the new Codman Square Theatre in Dorchester. The date of the funeral will be announced later.

ANNEX AT TECHNOLOGY FOR NAVAL AVIATORS



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TECHNOLOGY MAN RECEIVES ADVANCEMENT

John L. Ackerson, Naval Constructor, U. S. N., has been elected a Vice-President of the United States Shipping Board Emergency Fleet Corporation. Mr. Ackerson had been Assistant General Manager. He was recently elected to his new office at a meeting of the Board of Trustees at Washington. His promotion involves no other changes.

Before Charles M. Schwab came to the Emergency Fleet Corporation as Director General, Mr. Ackerson was Aide to Vice-President Piez. He was selected by Mr. Schwab as Assistant to the Director General and retained this title until two weeks ago when Mr. Piez was named Vice-President and General Manager. Then Mr. Ackerson became Assistant General Manager.

The new Vice-President has had much practical experience as a constructor for the Navy Department. He was given numerous special assignments after his graduation from the Naval Academy in 1901. He spent the following two years at sea as a midshipman on the East and West coasts. In 1906 he completed a post-graduate course in naval architecture at Technology and was detailed to the New York Navy Yard.

Later he became naval instructor under Rear Admiral Schroeder and was an aide on Admiral Schroeder's staff. The next two years he spent at sea. Then he was assigned to the design branch of the Bureau of Construction and spent five years in Washington, during which he was Superintendent of Construction at the Maryland Steel Works, Baltimore. Mr. Ackerson was sent to Mare Island Navy Yard in 1915 as Superintendent of New Construction, working on colliers, battle-ships and destroyers. From June to August of 1917 he did special temporary duty with the design branch of the Bureau of Construction and Repair, following which he went with Admiral Capps as Aide when the Admiral joined the Fleet Corporation as General Manager. When Admiral Capps left the Corporation, Mr. Ackerson remained as Aide to Mr. Piez.

THE PEOPLE AND WAR TAXES

More than \$3,500,000,000 has been collected in internal revenue taxes, including income and excess-profits taxes, for the fiscal year. This exceeds by over \$100,000,000 the estimates made a few months ago, and by over \$200,000,000 the estimates made a year ago when the revenue measures were passed by Congress.

The success in collecting this large revenue is attributed by the Treasury Department to the patriotism and co-operation of the American people in promptly and cheerfully meeting the war burdens imposed upon them.

AIR MAIL SERVICE

Conducted During August Without Mishap of Any Kind

The Post Office Department issues the following:

During the month of August the Air Mail Service between Washington, Philadelphia, and New York was conducted without a miss, hitch, or serious delay of any character.

The operations for the month were perhaps the most remarkable in the history of aviation. There were 27 flying days of which 108 legs of the journey had to be performed, and in that month there were but two forced landings, one with a delay of 7 minutes and the other with a delay of less than 10 minutes. One forced landing was made within 4 miles of Belmont Park at the end of a journey. It was caused by the break of a magneto shaft. The other forced landing was made on a flight where fog and haze obscured the ground, and for the purpose of picking up the course, because the compass failed to work.

The total possible miles of flight was 11,961, of which 11,957 miles were completed.

During the first 10 days of the month the routes were flown by Lieuts. Edgerton, Kilgore, Bonsal, Webb, Culver, and Miller without a miss, hitch, or forced landing. During the last 20 days of the month the civilian aviators of the Post Office Department operated the routes. The perfect scores were made by Aviators Max Miller and E. V. Gardner. Aviators Maurice Newton and Robert Shank, on the Philadelphia end of the route, each had one forced landing, giving them a score of 99 per cent.

A total of 5,679 pounds of mail was carried on the trips.

A most rigid mechanical maintenance system of all fields was maintained, with the result that the month closed without a single plane of the 15 being laid up in the shop for repairs.

NAVAL SECTION TO BE TRAINED AT B. U.

Boston University learned yesterday that it will have a naval section of the military training corps. Students accepted for the section by Lt. J. P. O'Neil and Asst.-Surg. W. W. Munsell will be sworn in Oct. 1 for aviation, engineering and line duties, rated as apprentice seamen and paid \$32.60 a month, besides tuition and subsistence allowances. Names will be taken in the order of application.

The university's land service corps will probably number over 1000. Three buildings have been assigned for the work of the corps.

The Tech

Established 1881

Published twice a week throughout the year by the students of the
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Entered as second-class matter, September 16, 1911, at the Post Office at Boston, Mass., under the act of Congress of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on July 19, 1918.

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Subscription \$1.50 for 53 issues, in advance. Single copies three cents.
Subscriptions within the Boston Postal District or outside the United States must be accompanied by postage at the rate of one cent a copy. Issues mailed to all other points without extra charge.

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Although communications may be published unsigned if so requested, the name of the writer must in every case be submitted to the editor. THE TECH assumes no responsibility, however, for the facts as stated nor for the opinions expressed.

The Editor-in-Chief is always responsible for the opinions expressed in the editorial columns, and the Managing Editor for the matter which appears in the news columns.

IN CHARGE THIS ISSUE

R. H. Smithwick '21 Night Editor

WEDNESDAY, SEPTEMBER 25, 1918

THE TECH WILL CONTINUE

ALTHOUGH the new order of affairs at the Institute has made it necessary to close up all Undergraduate Activities, it has been found advisable to continue The Tech as the news organ of the S. A. T. as well as to continue its service to the graduates and to the Tech men in the trenches.

AT the Institute there is a busy week ahead and the beginnings augur well for a normal registration. Early in the morning the Institute was invaded by the Naval group, Lieutenant J. P. O'Neil at its head, with three or four officers and a staff of five yeowomen and their typewriting machines. Room for this company was found in Dr. Sedgwick's department, the seminar room being given over to the clerical staff and the fourth year biological laboratory to the examining officers. A file of young men was constantly at the door and during the day one hundred and six of the students of the Institute declared their preference for the Navy, passed the physical examination and twenty-five were enrolled in the U. S. N. This enrollment was as apprentice seaman, with uniform, to be worn constantly, pay and subsistence together with allowance for tuition. It is understood at the moment that these young men will occupy the barracks now being erected on the school grounds together with the S. A. T. C., of which this is designated to be the Naval section.

The Tech regrets to announce the resignation of Night Editors Henry L. R. Kurth and Carole A. Clarke. Both Clarke and Kurth have done exceptionally hard and faithful work this year, and we have to thank them for carrying the paper through the summer term. With the staff of The Tech reduced to about ten per cent of normal, practically the whole burden of the paper fell on their shoulders. Kurth has taken a position as Radio Signal Set Inspector and Clarke is an Electrical Constructor at Squantum.

All our strength and all our resources are pledged to win the war. All that we have we are ready ungrudgingly to give, and without thought of material gain. President Wilson has said that America wants nothing for herself in the war that she does not want other nations to enjoy. To this sentiment the voice of our people has echoed overwhelming approval, giving evidence of a spiritual awakening that is purifying the life of the nation. It is the expression of the American ideal, liberty founded in justice, and soon to be made real to all peoples.

The spirit of willing sacrifice for the sake of an ideal which is emphasized by America will exalt the purposes of the war, and when peace comes it will be a peace to bring happiness to the peoples of all nations in a freer, more joyous and more abundant life.

(Signed) JOHN F. SHAFROTH.

"It was necessary that the United States should have entered the arena of arms in defence of freedom—the United States where liberty found its birth in the western hemisphere; and we, of the present generation of Americans, would be false to our patriot fathers and their patriot graves, did we not put everything we have, even life itself, if necessary, into the combat."

(Signed) MORRIS SHEPPARD.

PERSONALS

Helen April Spence of Auburndale and Raymond E. Wilson of Arlington, Technology '12, were married recently at the home of the bride's sister, Mrs. Russell Johansson, 59 Maple street, Auburndale, by the Rev. William B. Whitney of the Hill Memorial Church, Allston.

The bride was given in marriage by her father, William B. Spence of Allston. The best man was Henry H. Nelson of Jamaica Plain, and the maid of honor Mabel E. Wilson, sister of the bridegroom. Mr. and Mrs. Wilson will reside in Chicago.

Charles W. Eaton of Haverhill, a graduate of Technology '82, has presented the engineering department of the government with his automobile for any purpose to which it may be put. Mr. Eaton was for many years engaged in surveying and engineering projects in Boston harbor and in various parts of the South.

Mr. and Mrs. Arthur W. Piper of Newburyport announce the marriage of their daughter, Mildred Hayward to Capt. Charles Edward Atkinson, U. S. A., Technology '17, on Thursday, Sept. 12.

Lt. John Mason Remy, U. S. N., and Mrs. Remy, who were in Boston for some time while the former took a course at Technology, have gone to Washington and are housed at the Holton Arms school. Lt. Remy is in the aviation service.

John H. Babbitt '17, Course I, is with the 13th Anti-Aircraft Battery, Camp Eustis, Va.

Stuart M. Boyd '18, Course X, is stationed at Edgewood Arsenal, Cleveland, Ohio.

Walter D. Binger '16, Course I, has been commissioned 2nd Lieut., and is now in France.

William J. Farthing '16, Course I, who was president of his class senior year, is now an Ensign with the Bureau of Ordnance, Navy Dept., Washington.

Edwin J. Goldstein '16, Course X, is a Sgt., in the Chem. Warfare Sect.

Carl H. Holmberg '16, Course I, is with the 4th Co., 1st Battalion, 151st Depot Brigade.

William A. Liddell '16, Course I, is with the O. T. C., Camp Taylor, Ky.

Eugene W. van Court Lucas, Jr., '16, Course I, is now with the Engineers in France.

Charles J. McCarthy '16, Course I, is connected with the Bureau of Construction and Repair, Navy Dept., Washington, D. C.

Melville H. Rood '16, Course X, has been commissioned 2nd Lieut., and is with Battery C, 14th F. A., Fort Still, Oklahoma.

Jacob Sindler '16, Course X, has been commissioned Sgt., Gas Defense.

George M. Steese, A.B., '16, Course I, has been commissioned 2nd Lieut., and is with the 104th Engineers, Vancouver Barracks, Washington.

Walter C. Sadler, B.S., '16, Course I, has been commissioned 1st Lieut. with Co. F, 18th Engineers now in France.

Harold C. Weber '18, Course X, is a 2nd Lieut. with the Signal Corps.

George R. Wallace, Jr., '13, Course X, has been commissioned Capt. and is connected with the Field Artillery.

Alden H. Waitt '14, Course X, has been commissioned Capt. and is with the Eng. Corps, A. E. F.

Robert E. Wilson, '16, Course X, is a Major connected with the Chem. Ser. Sect.

Paul M. Flagg '17, Course II, has been commissioned Lieut. and is at present in the 2nd Co., 4th Development Battalion, 156th Depot Brigade, Camp Sevier, S. C.

Harold Lockett '10, Course II, a Capt. in the Field Artillery, is now in France.

Kenneth Lockett, '02, Course II, is a Capt. with the Engineers, Camp Humphrey, Va.

J. H. Richardson '99, Course I, is a Capt. in the office of Chief of Engineers, Washington, D. C.

Walter R. McKenney '19 has entered the Coast Artillery School at Fortress Monroe.

ORDNANCE BRANCH OFFICE OPENED

The War Department authorizes the following from the Army Ordnance Department:

The Army Ordnance Department announces that the St. Louis District Ordnance Office, headquarters for the recently established St. Louis district, has been opened. The office is on the tenth floor of the Equitable Building, St. Louis. Mr. M. E. Singleton is district ordnance chief for the St. Louis district.

If you despise what the Germans do, let your savings help fight them. W. S.

PREVENTION OF ACCIDENTS IN GOVERNMENT NITRO PLANT

The United States Employees' Compensation Commission issues the following:

The remarkably low accident record which has been made during the construction of the United States explosive plant C, at Nitro, W. Va., which was begun the early part of January, 1918, has proven the value of forethought and careful planning in the elimination of accident hazards through concerted effort in modern safety engineering.

This plant covers approximately 1,600 acres of land, upon which are constructed hundreds of buildings to be used in the manufacture of smokeless powder. In addition to this plant acreage there are about 900 acres of land, upon which are being constructed thousands of homes in which the operators will live.

No entries in the United States Accident Statistical Record Books, past or present, have been more wonderful than those now shown at this Government powder plant, where, to date, there has been but two-tenths of 1 per cent of the number of working hours lost by injuries resulting from accidents causing absence of employees.

But six fatalities have occurred at this plant during the past eight months of its construction period, where upward of 19,000 employees have been working overtime and Sundays to complete this gigantic project. Only 8 accidents per 10,000 employees per day have occurred, entailing loss of 1 day or more.

The supervision of this accident-prevention work has been done by a well-organized safety department which, representing the United States Employees' Compensation Commission, at Washington, D. C., has been under the direction of C. B. Hayward, safety engineer in charge. Its activities, coupled with the assistance and cooperation of the officials down to the workmen, have made it possible to create this new mark in accident-prevention work.

2,640 COLORED SOLDIERS IN 13 VOCATIONAL SCHOOLS

The War Department authorizes the following:

There are 2,640 colored soldiers in 13 vocational schools receiving special technical work in addition to military instruction under the direction of the War Department Committee on Education and Special Training. They are men of the United States Army Training Detachments, an organization soon to be absorbed by the Students' Army Training Corps in the colleges.

Courses are given for automechanics and drivers, blacksmiths, carpenters, electricians, horseshoers, machinists, plumbers, wheelwrights, radio operators, telegraphers, tractor operators, and electricians. The men are graduated every two months.

The schools to which the training detachments are assigned are: Howard University, Washington, D. C.; Atlanta University, Atlanta, Ga.; Florida Agricultural and Mechanical College, Tallahassee, Fla.; Georgia State Industrial School, Savannah, Ga.; Hampton Institute, Hampton, Va.; Negro Agricultural and Technical College, Greensboro, N. C.; Chicago Wendell Phillips School, Chicago, Ill.; Wilberforce University, Xenia, Ohio; Tuskegee Institute, Alabama; Western University, Quindaro, Tex.; Branch Normal School, Pine Bluff, Ark.; Prairie View Normal, Texas; South Carolina State Industrial School, Orangeburg, S. C.

CARBON ELECTRIC LAMP TO GO IN PLAN TO CONSERVE COAL

The Fuel Administration issues the following:

The United States Fuel Administration, in connection with the manufacturers and dealers in incandescent electric lamps, has worked out a detailed plan for eliminating the inefficient types.

The lamp manufacturers, at a meeting held in Washington August 28, voluntarily agreed to abandon the manufacture of certain types of the inefficient carbon filament lamp in accordance with the program which practically calls for the discontinuance of their manufacture and sale.

There are still a few isolated cases where the carbon lamp is required, such as on battleships where excessive vibration or shock calls for a lamp of the sturdy type. But with few exceptions, and these are confined to essentially war industries, the program is expected to gradually eliminate the carbon lamp in favor of the more efficient tungsten lamp.

Central stations, public service corporations, municipal plants, and others who may be using carbon-filament lamps are being asked to assist the manufacturers as well as the Fuel Administration in working out this program, inasmuch as sweeping conservation measures are imperative if the war industries and essential public needs are to be supplied.



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and LOOSE LEAF DEVICES
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"AIR TRAFFIC POSSIBLE AFTER THE WAR," SAYS HANDLEY PAGE

Speaking recently at the Savage Club Mr. Handley Page, the inventor of the great Handley Page bombing air machines, said that, when peace came, it would be possible to commence an air service between London and Marseilles with a single stop at Paris for an overhaul and take in petrol. When peace came there would already exist unparalleled facilities for the manufacture of airplanes, of which advantage should be taken.

Before the war, Mr. Handley Page continued, the actual transit of mails from London to Constantinople took seventy-two hours. By air the same journey could be effected in twenty hours. Rome could be reached in twelve and one-half hours instead of forty-two hours, Marseilles in eight hours instead of twenty-three hours. He was convinced that such a service could be run at a profit, both for mails and passengers, at a rate little in excess of that which was at present in force. He based his calculations on the use of a medium-sized machine making non-stop flights of 400 miles. Each would be provided with two 300-horse-power engines, and would carry 4400 pounds of revenue-earning load, in addition to the pilot, mechanic, and petrol necessary for a five-hour flight. There would be first-class aerodromes at each end of the route, and another in the middle, completely equipped for overhauling and repairing machines. Second-class aerodromes, with necessary equipment, would be provided every 100 miles, these latter corresponding to the ordinary stations of a railway. He provided for twenty-four machines running a minimum service of six machines each way per day. Such a service could be provided for a capital of under 500,000 pounds sterling. The cost per ton mile would work out at 20 1-2d., and the cost per passenger mile to 1.36d.

All Walker Memorial Dining Rooms

Are Open to All Tech Men NOW

Open Daily and Sunday

AMERICAN AND GERMAN FINANCES

Pessimistic Americans who view with alarm our increasing national obligations may derive a great deal of comfort from a comparison of the financial condition of the United States contrasted with that of Germany.

The total resources of the United States are estimated at about \$250,000,000,000; our annual earnings are estimated at about \$50,000,000,000. Our national debt, including the third liberty loan, may be put around \$12,000,000,000.

Before the war our Government was spending about \$1,000,000,000 a year. When the war is ended, interest charges, less the interest collected from our loans to our allies, Government insurance expenses, and other necessary expenditures growing out of the war may conservatively be estimated at something like \$1,000,000,000. We are confronted, therefore, when peace comes, with raising only a couple of billions a year revenue, a slight task for a Nation of such tremendous wealth, capacity, and resources.

The resources of Germany before the war were estimated to be \$80,000,000,000. The annual expenditures then of the Imperial Government were about \$800,000,000. Her debt now is \$30,000,000,000, and her resources and man power have been severely impaired. After the war she is confronted with additional expenditures growing out of the war totaling some \$4,000,000,000.

The interest of her war debt, even if the debt grows no larger, will be about \$1,500,000,000. Although she is niggardly in her pensions to private soldiers and their families, \$1,000,000,000 a year would hardly suffice to pay even small pensions to her injured and the families of her soldiers who have been killed. Her war debt must be paid some time and a sinking fund of 5 per cent would add \$1,500,000,000 to her annual taxation. Here is a total increase of \$4,000,000,000 all due to the war.

Of course both the United States and Germany may greatly increase their debts, but the increases will not change the relative situations.

The German Government has drained the German people of their gold, even their jewels and heirlooms, and yet the Imperial Bank of Germany now has but little over \$500,000,000 of gold in its vaults. The United States has made no call upon the people for the precious metal, and yet to-day has in its Treasury vaults practically \$2,500,000,000 of gold coin and bullion.

ELECTRIC SUPPLY IN ITALY

The statement that it is not improbable that a bank may be constituted in Italy, in the not far distant future, for dealing with hydro electric expansion, brings into prominence the great development in that direction which has been going on and of which so much is expected in the future. That Italy should become more self-sufficing has been a point constantly emphasized by Signor Nitti in his speeches on economic matters and hydroelectric development is one of the fields from which great results are expected. The fact of Italy's dependence upon other countries for coal, as is well known, has been the cause of very great difficulties during the war, primarily from an economic standpoint and secondarily with regard to the convenience of the population.

Signor Orlando has described how at one time in the anxious period which followed Caporetto passenger trains came to a standstill for lack of fuel, while the difficulty of obtaining supplies for heating purposes has been very great, the price of wood having risen at one time to about 400 lire a ton. This state of affairs has naturally thrown into greater prominence the necessity for making full use of the latent water power of the country, the "white coal" as it has been described and to the prospect of great developments in hydroelectricity in the future. Considerable developments have been taking place in this direction for some time; the fresh arrangements introduced by Signor Bonomi when he was at the Ministry for Public Works in 1916, paved the way for an advance, while little has as yet been made public concerning recent developments.

The electric supply companies have been greatly increasing in size and importance for some years past, a notable case in point being afforded by the "Societa Adriatica di Electricita," the capital of which, it is reported, rose from 300,000 lire in 1900 to 36,000,000 by October, 1916, and has further increased since that date.

Although, comparatively speaking not a very great deal has been done so far with regard to the actual electrification of railways, it appeared from Signor Villa's statement on the subject during the last parliamentary session that a considerable advance was soon to be expected in this direction with the use of water power obtained from the Alps. As he said then the hydroelectric problem is

closely connected with that of lignites, so far that is, as the finding of a substitute for coal for various purposes is concerned. Not long since indeed, Signor Nitti declared that an effort must be made to raise 30,000,000 tons of lignites annually.

FREE DENTISTRY FOR 70,000

Massachusetts leads all the States of the Union with a record of 70,000 free dental operations performed by Bay State dentists upon the army of enlisted and selective service men since the war began. Reports have just been issued from the New York headquarters of the Preparedness League of American Dentists showing Massachusetts third on the list for the month of July, with a credit of more than 7000 operations for that month.

This work is being done free of charge whenever necessary by the dental profession, which is volunteering time, materials and skill toward increasing the fighting efficiency of the men.

Dr. Charles M. Proctor, State director, is assisted by Dr. E. C. Briggs, Dr. William Rice, Dr. C. R. Lindstrom and Dr. William Flynn, members of the advisory committee, with headquarters for free dental activities established at the State House under the direction of the Committee on Public Safety.

TYPED SIGNATURES WELCOMED BY FIRMS

Rear Admiral Wood has received several letters congratulating him upon the recent order requiring all officers to typewrite their signatures.

The manager of a firm doing business with the navy department for over 15 years wrote that the order would be a great relief to hundreds of concerns and was a much-needed reform. The letter stated that in hundreds of cases it had been impossible to address the signer of a communication because of inability to read the signature, and that this had caused confusion and delay.

Rear Admiral Wood has issued an order that hereafter when any officer has to sign with his name an official document, he must first typewrite his name and then write it underneath in his own hand. "The order is issued because Admiral Wood has found it difficult to decipher the written signature of many officers."

There are sensitive souls who take a typewritten letter of a personal nature as an affront, even when the writer scrawls his name after the perfunctory "Yours truly," "Yours very truly," or "Yours sincerely," yet how many would be grateful if all correspondents whose handwriting is not clear, male and female after their kind, were compelled to print their name! Some persons, writing the letter itself so that it may easily be read, scribble the signature with an utter disregard of legibility. Others write blindly from date to finish. With some this carelessness is a species of vanity. It is as if the writer said, "My name is known to everyone." Others have been told that many great men have been noted for their execrable chirography. They run over the list from Shakespeare to Horace Greeley. If the correspondent is a musician, he will quote Beethoven. There was a time in England, perhaps in this country, when a good hand was considered incompatible with the character of a gentleman. Dr. Parr, whose own manuscript was often returned to him as illegible, reminded those who deemed calligraphy an accomplishment unworthy of a scholar and a gentleman, that Fox's handwriting was distinguished by clearness and firmness, Porson's by correctness and elegance, and Sir William Jones's by the "ease, beauty and variety of the characters."

Women are noteworthy offenders in penmanship. The handsomer the hand, the more difficult the deciphering. Beware of what is proudly called a characteristic hand. Married women writing on business will sign their baptismal name and give no indication of their wedded state, so that the answerer does not know whether the reply should be addressed to a wife or a spinster. The fine Italian hand cultivated by women in the fifties and sixties was much clearer than the bolder style that succeeded it. So, too, the "Spencerian" hand taught in schools of the late sixties, in spite of a certain commercial quality, had the great merit of legibility. Its flourishes, even when carried to excess, were not misleading or blinding.

It is to be feared that there is not due practice in pot hooks and hangers today, not so much as there was in the little old red schoolhouse. Reading, writing and spelling are still to be mastered, whether the school be public or "exclusive," "genteel."

With another credit of \$100,000,000 to Italy and \$9,000,000 more to Belgium the credits advanced by the United States to the Allies now total \$6,380,000,000.

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BAD NEWS FOR BERLIN

The war news from the eastern front these days is bad news for the German people. Quotations from German newspapers portray the gloom that overhangs the people in the large cities. That the people in the small towns and country are equally depressed is not to be doubted.

The Liberty Loan bond buyers of the preceding loans have their share in the success of the entente allies. They furnished the sinews of war not only to fight the U-boats and to build ships, not only to raise, equip, and send our soldiers over, not only to supply them and our allies with food and munitions, but more than \$6,000,000,000 of their money has been loaned to our allies so that they may prosecute the war with vigor and strength.

We here at home have an opportunity to send the Germans some more bad news. The Germans have great respect for money; they know its vital value in waging war. They know, too, that the support the American people give to Government loan measures largely the support they give their Government, the moral as well as the financial support they give their armies in the field.

A tremendous subscription to the Fourth Liberty Loan will be as distressing to the German people as a defeat for them on the battle field, and it will mean as much. It spells their defeat; it breaks their morale; it means power to their enemies. A subscription to the loan is a contribution to German defeat and American victory.

WHAT YOUR SUBSCRIPTION MEANS

When you subscribe to a Liberty Loan you subscribe to the sentiment that the world must be made safe for democracy and subscribe to the fund that is to make the world safe for democracy.

You subscribe to the belief that innocent women and children on unarmed ships shall not be sent to the bottom of the sea; that women and children and old men shall not be ravished and tortured and murdered under the plea of military necessity; that nurses shall not be shot for deeds of mercy; nor hospital ships be sunk without warning; or hospitals and unfortified cities be bombed or cannonaded with long-range guns.

You subscribe to the doctrine that small nations have the same rights as great and powerful ones; that might is not right, and that Germany shall not force upon the world the dominion of her military masters.

You subscribe, when you subscribe to a Liberty Loan, to the belief that America entered this war for a just and noble cause; that our soldiers in France and our sailors on the sea are fighting for right and justice.

And you subscribe to the American sentiment that they must and shall be powerful, efficient, and victorious.

CONSERVATION OF CREDIT

Not only should the goods and labor of the nation be conserved for the prosecution of the war; the credit of the nation must be conserved for the same purpose.

This is being impressed upon the banks, and it should be impressed upon the people too—the borrowers from banks.

All of the banks of the country are being urged by the Federal Reserve Board to curtail their loans. They are urged to loan money only where the borrower is going to use it in some way that will aid in or contribute to winning the war.

This policy is not aimed at hampering legitimate business. It aims to help win the war, which is the best thing possible for business. It simply means that money wanted for non-essential purposes should be refused. Let the non-essentials wait until the war is finished. The Government needs the money to carry on the war. The farmers, the men and the industries engaged in war work or engaged in producing things needed for the efficiency both of our soldiers and of our home people, need the credit to carry on their enterprises.

Merchants should not borrow money to stock up on luxuries or things that the people should not buy at this time. No one should borrow money now to spend needlessly or extravagantly. Unnecessary building, unneeded articles, unessential enterprises should all await the ending of the war.

The Federal Reserve Board points out that in the interest of successful Government financing it would be much better for the banks to hold credit within reasonable bounds by intelligent cooperation rather than to discourage borrowing by charging high interest rates. The people should cooperate with the Government and the banks in this policy of conserving credit and curtailing borrowing except where the money, directly or indirectly, helps win the war, helps our soldiers who are risking their lives for our country.

NAVAL UNIT AT HARVARD

The Navy Department has authorized the establishment of a Naval unit at Harvard University. The unit will be in charge of a Naval officer and will be conducted along the same general lines as the Students' Army Training Corps.

Men physically fit, between the ages of 18 and 45, who have satisfactorily completed a good high school course, or its equivalent, may be voluntarily inducted into the Naval unit. They will thereby become seamen in the United States Navy, and will be housed, fed, uniformed and instructed at the cost of the Government. They will also receive the pay of an enlisted man in the Navy.

Those members of the unit who meet the requirements of the Navy will be candidates for admission to the Naval Officer's Training School at Harvard.

Registration took place at the university on Sept. 23, when the course of instruction began. Official induction into the unit will take place on Oct. 1. Between Sept. 23 and Oct. 1 the university will supply sleeping quarters without charge. Young men who desire to be admitted to the Naval Training Unit should apply to J. C. Hart, 20 University Hall, Cambridge, and should enclose a transcript of their school records and certificates of school graduation.

MERCHANT MARINE WANTS 4000 VOLUNTEERS IN SEPTEMBER

Four thousand volunteers will be accepted in September by the United States Shipping Board for the merchant marine training ships, it was announced today by the board, 2,000 for training as firemen, \$50 as sailors, and 1,500 as stewards, cooks, or messmen.

These will be taken into the training service, as follows: At the Atlantic training base at Boston, 3,000; at San Francisco, 500; and at Seattle, 500. The merchant marine is the only seagoing service now accepting volunteers. They may enroll at 6,000 special recruiting stations of the Shipping Board, at drug stores in 48 States. Eighteen is the minimum age limit.

LOOKING FORWARD TO THE FOURTH LIBERTY LOAN

Wear your old clothes and buy Liberty Bonds.

Liberty Bonds or German bondage.

"Come across" or the Kaiser will.

The soldier gives; you must lend.

Liberty Bonds or German taxes.

Buy over here to win over there.

It's billions for defense or billions for indemnity.

For Foch and freedom; buy bonds.

A bond-slacker is the Kaiser's backer.

A man who won't lend is the Kaiser's friend.

The more bonds you buy the fewer boys will die.

Let all get on the bond wagon.

Be one of the millions to lend the billions.

Dig up the coin and bury the Hun.

Buy bonds before it's verboten.

Idle dollars are pro-German.

Put the "pay" into patriotism.

Bonds speak louder than words.

If you can't fight, your money can.

Freemen buy bonds; slaves wear them.

WHAT WE FIGHT FOR

The high aims of America and her allies are well expressed in President Wilson's greetings to France on Bastille day:

"As France celebrated our Fourth of July, so do we celebrate her Fourteenth, keenly conscious of a comradeship of arms and of purpose of which we are deeply proud. The sea seems very narrow to-day. France is so close neighbor to our hearts. The war is being fought to save ourselves from intolerable things, but it is also being fought to save mankind. We extend our hands to each other, to the great people with whom we are associated; and to the peoples everywhere who love right and prize justice as a thing beyond price, and consecrate ourselves once more to the noble enterprise of peace and justice, realizing the great conceptions that have lifted France and America high among the free peoples of the world. The French flag flies to-day from the staff of the White House, and America is happy to do honor to the flag."

SAVING AND LENDING

Sir William Goode, of the British Food Ministry, says that from July, 1917, to April, 1918, the United States exported to the allies 80,000,000 bushels of wheat products. Of this it is asserted that 50,000,000 bushels represented voluntary sacrifices by the American people in their consumption of wheat.

There is a triple economy, a triple aspect to this saving of wheat. It saved wheat for our Army and the armies of our allies; it saved money to the American people, and for the most part this money went for the purchase of Government war securities.

CRUDE OIL DEMANDS ARE BEING MET BY THE WEST

With the demand for gasoline and for the crude oil from which it is made, as well as for the ammonia to be used in fertilizers, growing more and more imperative, it is encouraging to learn rapid progress is being made in the work of producing these materials from the oil shales found in great deposits in our western states, especially in Colorado, Nevada, Montana, Utah and Wyoming.

More than a dozen large companies have been organized to win oil from these shales and are now making experiments to determine the most efficient and economical way of doing so. Aerial tramways are being built to bring the shale from mines to be opened high on the sides of the mountains down to retorts or distillation plants to be built in the valleys near water and near lines of transportation.

Making Discoveries

Chemists are finding that a great many useful things can be made from the oil shales—such as dyes, explosives, paints, fertilizers, and substitutes for rubber, as well as gasoline, kerosene, paraffin, and flotation oil—but the industry is not yet far enough advanced to enable anyone to tell which of these products or how many of them can be manufactured at a profit. The industry must eventually succeed, but its success may depend largely on the profits derived from the sale of the by-products.

A report recently published by the United States geological survey, department of the interior, shows the results of geologic examinations of oil shale in the Uinta basin, Utah, by D. E. Winchester, and gives records of distillation and tests of samples of shale collected elsewhere in the United States.

Oil Shale in Utah

The oil shale in Utah is black or brownish black, except on weathered surfaces, where it is bluish white or white. It is fine grained, slightly calcareous and generally free from grit.

It is tough, and its thinner beds are remarkably flexible. Its flexibility distinguishes it from ordinary carbonaceous shale, which is brittle. When ignited with a match a thin splinter of oil shale burns with a sooty yellow flame and gives off an asphaltic odor.

Oil shale is heavier than coal, having an average specific gravity of about 1.6 but the richer shales are not so heavy as the leaner ones. The oil shale of the Green River formation contains about sixty per cent of ash. As good coal contains less than ten per cent of ash (oil shale cannot be profitably used directly as fuel).

Mined Like Coal

In order to obtain its content of oil the shale must be mined like coal, crushed and distilled in huge retorts, in which it gives off crude shale oil, ammonia and fuel, gas, products from which may be made a large number of valuable substances. Though some of the shale has on distillation yielded more than two barrels of oil to the ton, very little of the oil is in the shale in the form of oil. The shale contains a great mass of partly bituminized vegetable matter, which can be converted into oil by heat.

A map accompanying the geologist's report, which is published as Bulletin 691-B, indicates there is a vast area of oil-shale land in northeastern Utah, and the report shows the thickness and richness of the shale beds at many places. The report may be obtained free by addressing the director of the United States Geological Society, Washington, D. C.

GLASS INDUSTRY HANDICAPPED

The destructive effect of the war upon the glass industries of Belgium and France, and the shutting off of glass imports from Germany and Austria, especially optical and laboratory glassware, made immediate constructive work in the United States imperative. At the present time we are producing large quantities of optical glass of the kinds needed for military fire-control instruments and of a quality equal in practically every respect to the best European glass.

The inquiry elicited from manufacturers and importers suggestions and recommendations having especial reference to our developed export trade and its extension, and the retention and expansion of our domestic trade after the war. The views of manufacturers who expect to hold their export trade after the war and those who do not expect to hold it are interesting features of the report. The replies to the inquiry "Factors depended upon for holding domestic trade after the war" are also of particular interest and range from "low costs of production," "quality of goods," "efficiency in production," "lower costs of materials," and "readjustments of wages" to dependence "upon a protective tariff."

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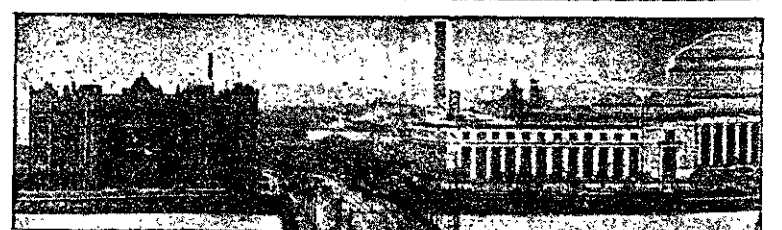
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